

Listing of Claims:

Claims 1-15 (Canceled).

16. (Previously Presented) A microscope comprising:

a light source which illuminates a specimen;

an objective located opposite to the specimen;

a field stop projection lens, located on an illumination

5 axis between the light source and the objective, to narrow a
field of view of the specimen;

a digital micromirror device which is conjugate with the
specimen via the field stop projection lens and the objective,
and which comprises a plurality of two-dimensionally arrayed

10 micromirrors that are individually selectable to be turned on so
as to reflect light along the illumination axis to the specimen;

a reflection mirror which reflects illumination light from
the light source onto the digital micromirror device;

a shutter;

15 a dichroic mirror which is located on an observation axis of
the objective so as to reflect the illumination light emitted
from the light source onto the objective and to pass observation
light from the objective;

an excitation filter which selectively passes light
20 components of the illumination light that are suitable for
excitation of a fluorescent material in the specimen;

an absorption filter which selectively absorbs light
components of the observation light;

a camera located on the observation axis to pick up an
25 observation image;

a monitor which displays the image picked up by the camera;

a drive controller which controls the digital micromirror
device and the shutter; and

a computer which controls the drive controller, camera and
30 monitor such that:

before picking up an image of the specimen, all of the
micromirrors are turned on while the shutter is closed, and the
shutter is opened to cause the illumination light to be guided to
the specimen via the turned-on micromirrors, such that an image
35 of a part of the specimen that is located within the field of
view is picked up by the camera, and wherein the shutter is
closed after an image pick-up operation of the camera ends;

the image picked up by the camera is displayed by the
monitor, an irradiation area to be irradiated with the
40 illumination light is specified, and respective ones of the
micromirrors which correspond to the specified irradiation area
are specified; and

before picking up an image of the sample again, only the specified ones of the micromirrors are turned on while the shutter is closed, and the shutter is opened to cause the illumination light to be guided to the specimen via the turned-on micromirrors, such that another image of the part of the specimen that is located within the field of view is picked up by the camera, and wherein the shutter is closed after the image pick-up operation of the camera ends;

wherein when the shutter is closed, the shutter prevents stray light, from gaps between adjacent ones of the micromirrors, from reaching the specimen.

17. (Previously Presented) The microscope according to claim 16, wherein the shutter is located between the light source and the reflection mirror.

18. (Previously Presented) The microscope according to claim 16, wherein the shutter is located between the digital micromirror device and the field stop projection lens.

19. (Currently Amended) A microscope comprising:
a light source which illuminates a specimen;
an objective located opposite to the specimen;

a field stop projection lens, located on an illumination
5 axis between the light source and the objective, to narrow a
field of view of the specimen;

a digital micromirror device which is conjugate with the
specimen via the field stop projection lens and the objective,
and which comprises a plurality of two-dimensionally arrayed
10 micromirrors that are individually selectable to be turned on so
as to reflect light along the illumination axis to the specimen;

a reflection mirror which reflects illumination light from
the light source onto the digital micromirror device;

a shutter;

15 a dichroic mirror, which is located on an observation axis
of the objective so as to reflect the illumination light emitted
from the light source onto the objective and to pass observation
light from the objective;

an excitation filter, which selectively passes light
20 components of the illumination light that are suitable for
excitation of a fluorescent material in the specimen;

an absorption filter which selectively absorbs light
components of the observation light;

a camera located on the observation axis to pick up an
25 observation image;

a drive controller which controls the digital micromirror
device and the shutter; and

a computer which controls the drive controller such that:

before picking up an image of the specimen, desired

30 ones of the micromirrors are turned on while the shutter is closed, and the shutter is opened to cause the illumination light to be guided to the specimen via the turned-on micromirrors, and wherein the shutter is closed after an image pick-up operation of the camera ends, so as to prevent stray light, from gaps between
35 adjacent ones of the micromirrors, from reaching the ~~sample~~
specimen.

20. (Previously Presented) The microscope according to claim 19, wherein the shutter is located between the light source and the reflection mirror.

21. (Previously Presented) The microscope according to claim 19, wherein the shutter is located between the digital micromirror device and the field stop projection lens.